



GRAND INGA: Misplaced Hopes

Inga Dam DRC | Photo: International Rivers

The Congo River is a life-giving source; sustaining people and rich biological diversity including at least 700 fish species, the world's second-largest rainforest, and one of the world's largest carbon sinks - the Atlantic Congo Plume.

The river, the people who depend on it, and the environment have all been adversely impacted by two hydropower projects. These projects are the Inga 1 and Inga 2 dams, which were constructed in the Democratic Republic of Congo (DRC) in the 1970's and 1980's respectively.



Introduction

Despite the fact that the negative effects of these two dams are generally known, coupled with continued concerns from both civil society and the Congolese people who will be directly impacted, the DRC government still plans on building Inga phases 3 through 8, collectively referred to as Grand Inga. If built, Grand Inga would be more than double the size of the world's current largest hydropower project, China's Three Gorges Dam.

Over the past decade, there have been several changes to developers, investors and project off-takers. From the World Bank who later withdrew from the project due to governance issues, to the African Development Bank (AfDB) who supported with technical assistance and feasibility studies for Inga 3. Additionally, the consortium between the Spanish company Actividades de Construcción y Servicios (ACS), China Three Gorges (CTG) Corp and PowerChina was dismantled upon the withdrawal of ACS from the consortium. As of 2020, the DRC government signed a Deed of Agreement with Fortescue Futures Industries (FFI), a subsidiary of the Australian iron ore company Fortescue Metals Group (FMG), the premise of which is to develop Grand Inga together with dams in Matadi and Mpioka to generate an enormous 70 GW of hydropower to produce green hydrogen.

Plans for the Inga project disregard studies demonstrating that the negative impacts on the environment, people, and climate, cost overruns and delays, far outweigh the benefits of dams. Likewise, both Inga 1 and 2 were mired by these unfavourable conditions.

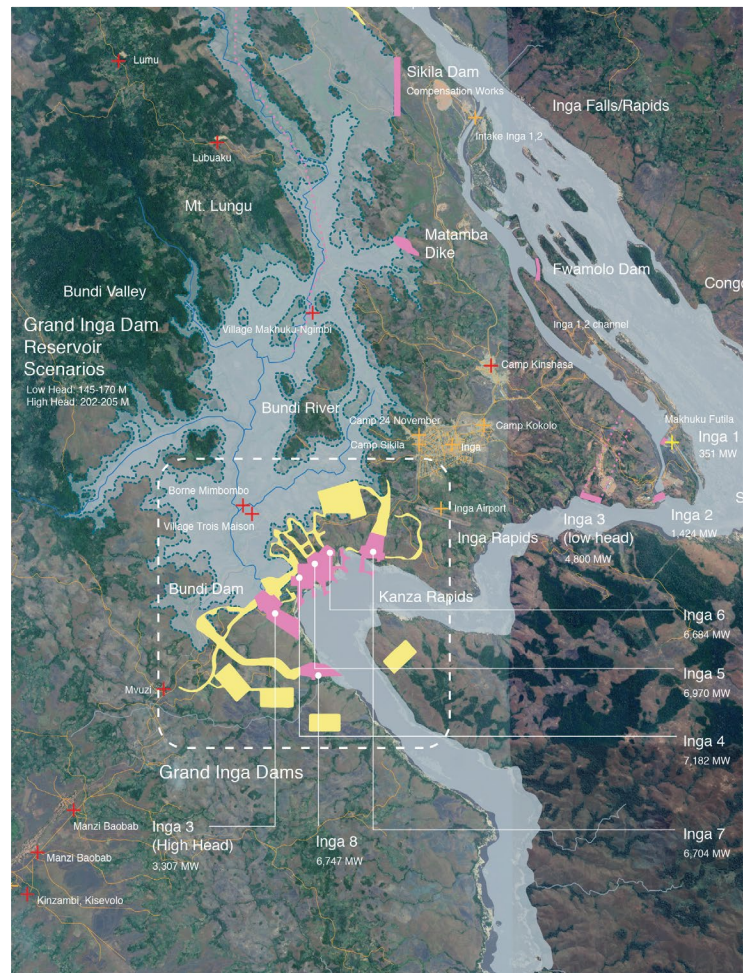
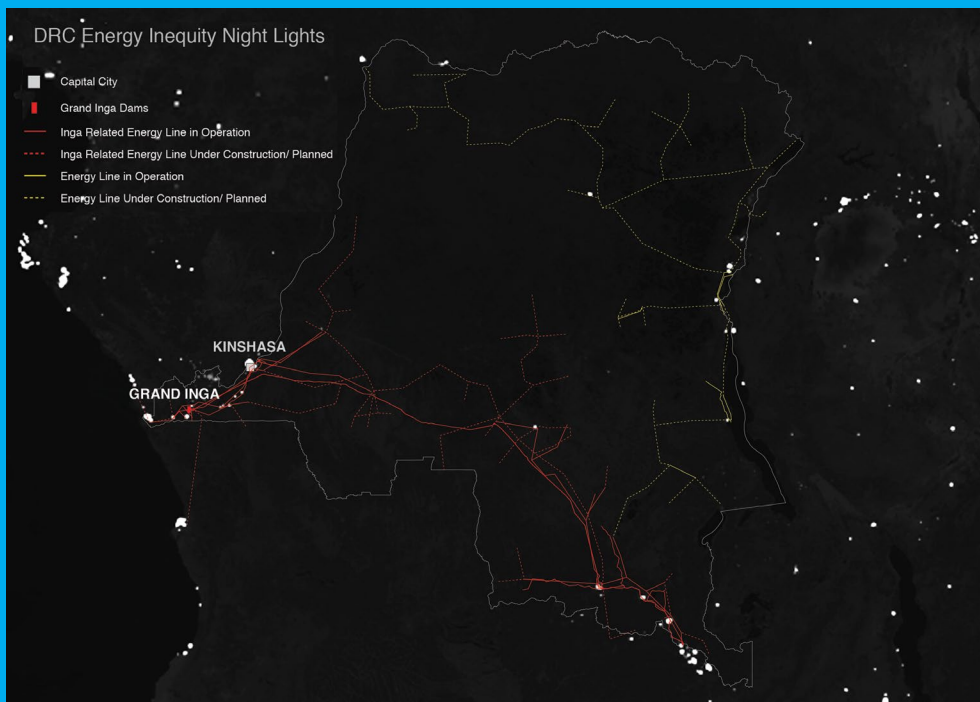


Diagram by Jocelyn Tang



Inga 1 and Inga 2 were not developed to address the energy needs of all Congolese, about 90% of whom lack access to electricity. The dams were constructed to supply electricity to mines in eastern DRC and the capital, Kinshasa. Similarly, Grand Inga is intended for hydrogen production primarily for export to European countries and other foreign demand centres as well as input into industrial processes such as smelting, ammonia manufacturing, and steel production.

Diagram by Jocelyn Tang

The Congo River

The Congo River is a source of livelihood for millions of Congolese. The river sustains the region, its people, and supports the world's second-largest rainforest. It is the second longest river in Africa, after the Nile, and is second only to the Amazon in terms of flow. The Congo River empties its waters and an enormous volume of sediment into the Congo Plume, one of the largest carbon sinks in the world.

Disasters created by Inga 1 and 2

Plans to harness the Congo's enormous power at the Inga site have been in place since the early 1950s. The first steps to develop hydropower were undertaken by the then Zaire's President Mobutu Sese Seko's government, with the Inga 1 dam commissioned in 1972, and the second phase following in 1982 together with the Inga-Kolwezi transmission line which evacuated power to eastern DRC.

These two corruption-laden projects commissioned by the government of the DRC have had disastrous impacts on local communities and ecosystems. The projects displaced thousands

of people, destroyed livelihoods, plunged the country into debt, and have failed to generate the power promised. The dams fell into disrepair due to lack of maintenance, and the ongoing rehabilitation effort for the dams is over budget and has suffered years of delays. According to a Société Nationale d'Electricité (SNEL) technician, the two dams are still operating under capacity due to ongoing repairs.

The dams were constructed to supply electricity to mines in Southeastern DRC and the capital city, Kinshasa. The 1,770 km Inga-Kolwezi transmission line, which transports electricity to these distant areas, bypasses villages close to the dams, cities, and under-served communities. These dams have thus failed to provide electricity to the majority of the Congolese population, including those displaced for their construction. Following many years of delays, the project costs soared from the initial projections by several hundred millions of US dollars, leaving the country in debt.

Communities affected by the construction of Inga 1 and Inga 2 were never compensated. Their relocation and subsequent loss of livelihoods has resulted in the impoverishment of tens of thousands over multiple generations. Most of these people face displacement once more should plans to further develop the Inga site proceed.



The Congo River | Photo: Shutterstock



Inga Dam | Photo: wikimapia.org

Stalled Plans for Inga 3

After the commissioning of Ingas 1 and 2, the authorities were no longer concerned about the Inga site because they had implemented their plans to provide electricity to Kinshasa, to supply the cobalt and copper mining industries of the province of Katanga, and for the sale of electricity to some countries in the sub-region.

It was with the ascension of President Joseph Kabila to power that interest in the Inga site was revived at the conclusion of the civil war, with the signing of a now-expired ten-year treaty between South Africa and DRC, making South Africa the key purchaser of electricity from Inga 3. The agreement was to initially purchase 2,500 MW of power from the planned 4,800 MW Inga 3 dam design. At that size, the Inga 3 dam was conservatively estimated at US\$14 billion for the construction of the dam and an additional US\$4 billion for transmission lines, delivering power to the border of South Africa. In early 2019 South Africa requested an increase in the amount of power to be purchased, from 2,500 MW to 5,000 MW when the project was redesigned to generate 11,000 MW. Approximately 3000 MW would be sold to mining companies in the DRC's Katanga province, with the remaining power pledged toward the DRC's state energy utility, Société Nationale d'Electricité (SNEL). Countries such as Nigeria and Angola, German investors, and mining conglomerates such as BHP Billiton who later

withdrew from the project, had shown interest in power from Inga 3 and subsequent phases of the Grand Inga Project.

The joint consortium of developers led by CTG and ACS were given exclusive rights to develop Inga 3. At the end of 2019, plans to develop the dam were jeopardised as members of the consortium started to disagree about the course of development of the project and the percentage of shares in the project. As a result, ACS withdrew from the project in 2020, leaving a new consortium of six Chinese companies led by China Three Gorges (who together, have a 75% stake in the project) and one Spanish company – AEE Power Holdings (with a 25% stake in the project). Since the withdrawal of ACS, Egypt Income Co. expressed an interest in forming an Egyptian-Chinese consortium with China State Construction Engineering Corporation, and BHP Billiton also expressed interest in re-joining the project.



Yet, despite keen interest from a number of developers and potential off-takers, Inga 3 has stalled for years with no apparent progress. Investors withdrew their financial support; In 2016, the World Bank, which initially heavily promoted Inga 3, cancelled its US\$73.1 million technical assistance grant due to governance concerns. The African Development Bank's (AfDB) technical assistance support for Inga 3 lapsed in 2019.

Therefore, funding was not secured, and progress on the project stagnated.

Fortescue's green hydrogen ambitions for Grand Inga

The elevation of President Félix Tshisekedi to the highest office brought a new conceptualisation of the Inga project. With promises to develop the entire Grand Inga site and beyond for hydrogen production, Fortescue Future Industries signed a Deed of Agreement on the development of substantial green industries in the DRC with the DRC government in September 2020.

This project is intended to establish industries in the town of Moanda on the Atlantic Ocean, in Kongo Central province. This is predicated on the development of the Inga site for a hydroelectric complex production of green hydrogen, green ammonia, and the processing of metals primarily for export to European and other markets in the Global North. FFI plans to produce 70 GW of hydropower for the production of green hydrogen. This comprises 15 GW from the Pioka dam, 15 GW from the Matadi dam, and 40 GW from the large Inga.

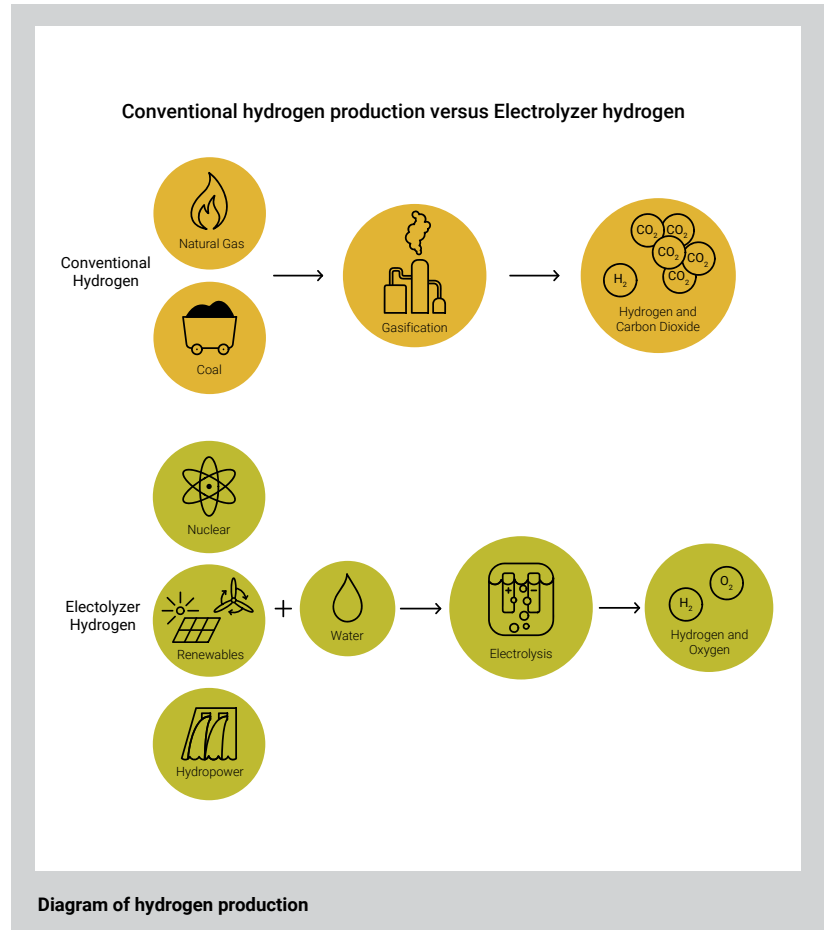
The Deed of Agreement commits that both parties would sign a project level agreement within 12 months from the date of the agreement. To date, the DRC government has not entered into any such agreement with FFI, and instead continues to negotiate with South Africa and other potential investors and off takers, with indications that the Chinese companies may possibly return to the project and the World Bank, which has recently announced its interest in the restructuring of the project.

Civil society has criticised the approach of the Deed of Agreement:

- The energy produced from the project would be exported without addressing the energy needs of Congolese citizens;
- The control and exploitation of the resources of the DRC would be transferred to a foreign company;
- The procurement process lacks transparency and violates public procurement processes in DRC.

Other clauses around which civil society has been vocal include the requirement that *"the DRC government will provide a regulatory framework that will meet the requirements for financing as directed by FFI, and if needed the government will make the necessary amendments to legislation to give effect to this clause."* This infringes on democratic processes of law-making which demands full and rigorous consultation.

Of additional concern is a clause that stipulates that the *"DRC government will ensure that no person, entity or government is provided access or exploitation rights unless it is relinquished by FFI in writing"* This is problematic as there are communities whose movements would then be restricted within land that they utilise, own and reside on.



Inga village | Photo: International Rivers

Social impacts

Hydropower can bring significant environmental harm in terms of aquatic and riparian ecosystems and species loss, as well as loss of livelihoods dependent on those resources. Across the world, large dams have already displaced some 80 million people and compromised the livelihoods of 472 million more.

Construction of Grand Inga would flood the Bundi Valley, turning it into a vast lake parallel to the Congo River. This valley is where populations of the Inga site and the surrounding villages conduct agriculture, fishing, and hunting, and is a place where people live and work. An earlier, smaller design of Inga estimated that about 37,000 would be displaced.

With Grand Inga, the numbers would be significantly higher, meaning tens of thousands more people would be directly displaced by the development of the Grand Inga, and many others will be indirectly affected as the dam disrupts their economic and livelihood activities. Community members residing tens of kilometres from the project site, as far as Kinshasa and Congo-Brazzaville would be displaced, including communities dependent on fishing would be cut off from a source of sustenance and livelihood. Communities displaced by the construction of Inga 1 and 2 would once again be displaced again by the construction of subsequent Inga dams.

An enormous amount of fertile land would be flooded to create a reservoir for Inga. This would result in a loss of productive land for agriculture and riverine-dependent communities. Thousands of farmers upstream and downstream of the dam site will lose access to land, and this will jeopardise food security and the basis of an agrarian economy. Communities depending on fishing would be cut off from a source of sustenance and livelihood.

This situation would create a knock-on effect where women would no longer be able to engage in farming for sustenance and the selling of produce at markets. Loss of land and income would adversely affect families and children, reducing access to basic services such as schools, clinics, and access to clean water.

Ultimately, the displacement of people would disrupt the livelihoods of at least four times the number of permanent jobs that are expected to be created by the construction of Inga. Despite a commitment to “*professional training and employment*”, which is a clause in the Deed of Agreement, the highest number of jobs for hydropower infrastructure is created during construction only, and experience has shown that the bulk of jobs would be for manual labourers.



Community members | Photo: International Rivers



Fishermen on the Congo River | Photo : International Rivers

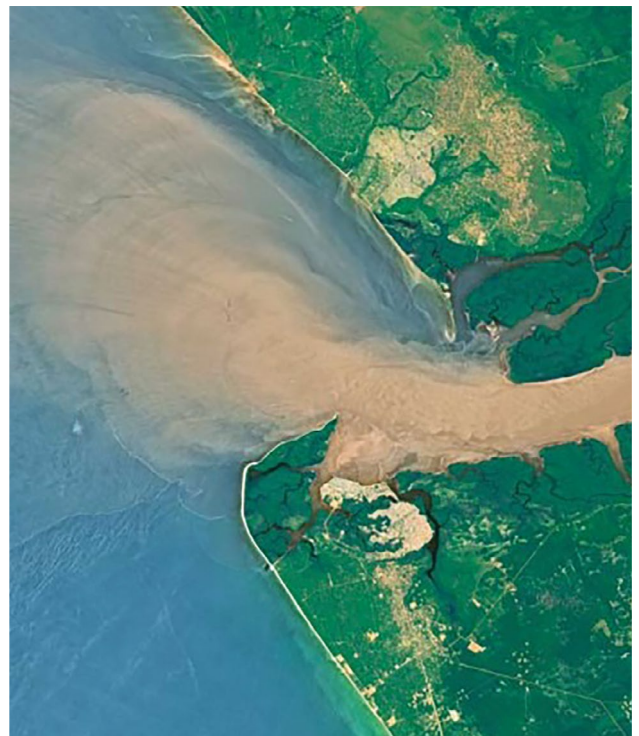
Environmental impacts

Grand Inga would substantially impact the Lower Congo, one of the world's largest river catchments.

Anticipated detrimental impacts on the environment include a reduced flow of the Congo River which would endanger the biodiversity of the region and cause a shift in the dominant water species. The Congo River ecosystem would be changed to an idle water reservoir habitat, thus degrading its water quality.

Hydroelectric dams artificially reconstruct and modify river ecosystems, leaving them exposed and vulnerable to the threat of climate change. Dam reservoirs are a significant source of methane, a potent greenhouse gas.

Healthy rivers draw 200 million tons of carbon out of the atmosphere each year as they transport sediment inland out to the oceans, a function that is disrupted by hydropower dams. The construction of Grand Inga in the DRC would disrupt the vast Congo Plume, one of the world's largest carbon sinks, sustained by the Congo River emptying sediment into the Atlantic Ocean, drastically reducing its ability to absorb carbon dioxide. This would result in increasing levels of carbon dioxide in the atmosphere.



Atlantic Congo Plume | Photo: NASA

Consultation of communities and civil society

To date, no Environmental Social Impact Assessment (ESIA) has been conducted to concretely determine Grand Inga's impacts or what measures would be taken to mitigate them.

Of further concern are the activities of FFI within Inga communities as described by residents of these communities, who have noted their tactic of ingratiating themselves with sections of the community by distributing donations under the guise of poverty alleviation. FFI also conducts community engagements in the presence of security services, while sidelining civil society organisations that accompany the communities, by restricting their access during these community engagements.

FFI's community engagements disregard the DRC legal requirement to secure the Free Prior Informed Consent (FPIC) of affected communities and the provision of legal information on issues affecting their land as well as heeding all views in decision-making.

Despite imminent threats to their livelihoods, local communities have not been included in decision-making, have not been consulted, and their strong opposition to the project has been ignored.



Woman in Inga | Photo: International Rivers



Community meeting | Photo: Shutterstock

Alternatives to mega-dams

The DRC needs a sustainable energy transformation with a focus on delivering energy access. It needs solutions to eradicate energy poverty, and to increase energy security and access for rural and urban communities.

The African continent at large is rich in renewable energy sources that can be deployed more cheaply and take less time to build and install. A diversified approach to energy generation not only saves in costs as technologies advance, but also opens up opportunities for vulnerable citizens by providing jobs and supporting livelihoods without compromising the water supply from free-flowing rivers and their ecosystems.

Renewable energy systems such as solar and wind power are widely recognized for their adaptation to changing climates and ability to mitigate impacts. Renewable energy also promotes energy efficiency that is affordable, clean, and is the quickest solution to bridge the energy gap, particularly in the DRC.

DRC's ample wind and solar could be harnessed to meet the needs of communities in rural areas away from the grid and to power cities.

DRC also has ample water resources, and micro-hydro is well-placed to meet the needs of the DRC's decentralised population. These more modest-sized hydro projects can similarly complement solar and wind to meet the needs of cities and towns.